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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,793	03/30/2001	Sanghoon Lee	Lee 1-17	7445

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EXAMINER	
BRIER, JEFFERY A	

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/823,793	LEE ET AL.	
	Examiner	Art Unit	
	Jeffery A Brier	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-25,31-34,36,38 and 40-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-25,31-34,36,38 and 40-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. No amendments were made in the 11/09/2004 response. The claims were not presented in this amendment. The pending claims are found in the 12/31/2003 amendment.

Response to Arguments

2. Applicant's arguments filed 11/09/2004 have been fully considered but they are not persuasive. On the first and second pages of the remarks applicant argues:

1) For example the foveated area may be defined using a local or remote poiting device that may be used to control the direction of a video camera. See Patent Application, page 5, 11. 15-17.

2) In contrast, Heinzelman describes partitioning a video image into motion data and texture data and then providing error protection for the motion data that is greater than error protection that is provided for the texture data. Heinzelman does not describe or suggest defining at least one foveation point in a video image.

3) Accordingly, Heinzelman fails to teach or suggest providing different encoding schemes for data signals corresponding to a foveation area and a background area.

The arguments are not persuasive because applicant is failing to fully consider additional definitions that applicant's specification has given to foveation.

Applicants' specification at page 5 lines 4-7 defines foveation as:

> This image area can be determined by visually detecting a high motion activity area in an image, by viewing a desired area of the image, such as in security camera applications, or simply be determined manually by the viewer.

Applicants' specification at page 5 lines 4-7 states the foveation area can be determined by:

> Alternatively, foveated area 12 can be automatically determined through the use of foveation filters or screen pattern filters, without the need for physical pointing devices. Figure 1a shows the resulting foveated area 12.

Therefore Heinzelman's encoder is covered by applicants foveation filter.

Applicants specification at page 11 lines 16-17 defines the background area as:

> The remainder of image 30 is background area/layer 36.

Applicants' specification at page 13 lines 18-20 further define foveation and background area as having multiple foveation and background areas:

> Further, the descriptions related to a single foveated area 12 in a video image 10, although in actual applications, there can exist a multitude of foveated areas 12 in a same video image 10.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., foveation point and foveation area) are not further limited in the rejected claims to that which applicant alleges the claims to be limited. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Since the specification defines foveation point and foveation area as an area having

motion activity in the image, then applicants claims claim this. Applicant needs to amend the claims to exclude the means and method that Heinzelman uses to determine the area of motion in order to overcome the rejection. Applicant needs to amend the claims, rather than just presenting arguments directed to additional definitions given by applicant concerning foveation point and area, in order to overcome the rejection.

Heinzelman teaches to one of ordinary skill in the art providing different encoding schemes for data signals corresponding to a foveation area and a background area. At column 2 lines 46-50 Heinzelman teaches the motion area has higher importance than the texture information. At column 3 line 57 to column 4 line 6 and column 4 lines 38-42 different error protection coding for the motion and texture is described. Since applicant has defined foveation area as an area having motion and needing higher error correction then Heinzelmans' area of motion with higher error correction is a foveation area. The claims need to be amended in order to overcome the rejection.

On the third page of the remarks applicant argues:

> Heinzelman also fails to provide any suggestion or motivation for modifying the prior art to arrive at Applicants claimed invention. To the contrary, Heinzelman appears to teach away from Applicant's claimed invention.

Heinzelman does not teach away from applicants invention because:

1) Heinzelman teaches one of applicants definitions for foveation-an area of motion,

2) Heinzelman teaches one of applicants definitions for background area/background layer 36- the remainder of the image information after the motion information,

3) Heinzelman teaches to use a higher error correction for the motion area and lesser error correction for the texture area- the texture area is a background area, and Heinzelman teaches at column 2 lines 46-50 the motion area has higher importance than the following texture information.

3. Applicants need to amend the claims to more specifically claim the foveation area, the background area, and how the areas are determined as the foveation area or the background area in order to overcome the rejection based upon Heinzelman. Heinzelman uses an MPEG-4 encoder to convert an image into the bit stream shown in figure 1 having motion and texture areas. Heinzelman uses the channel encoder to form the bit stream shown in figure 4 having different error correction for motion and texture information. Applicants claim coverage currently covers Heinzelman, thus, Heinzelman teaches the claims.

4. Oosawa, US Patent No. 6,826,233, teaches at column 1 lines 19-30 that in MPEG-4 the transmission side transmits one object of moving picture only for persons and one object for background and at column 2 lines 19-20 Oosawa teaches the background has less priority than the moving objects. Since this discussion of objects and priority occurs in the background then this patent is describing that which was known to others prior to 12/28/1999 and since MPEG-4 was known in this country prior to 12/28/1999 then it may be considered to be known in this country that MPEG-4 has moving objects and background objects. Oosawa at column 3 lines 8-15 teaches changing the level of error correction according to the importance of the object.

Therefore, any amendments applicant makes to the claims need to differentiate the claims from Oosawa's background information and Heinzelman.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It was not executed in accordance with either 37 CFR 1.66 or 1.68.
The date for Sanghoon Lee is incomplete, it lacks the year of execution.

5. The prior art rejection set forth in the last office action is reproduced below with minor enhancements to the definition of foveation.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 20-25, 31-34, 36, 38, 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Heinzelman et al., U.S. Patent No. 6,754,277.

Heinzelman teaches applying greater error protection coding to motion portions of the video and lesser error protection coding to texture portions of the video. Heinzelman teaches determining the foveation point of video by determining the point or points of motion. The foveation area is the area of video forming the moving objects.

A detailed analysis of the claims follows.

Claim 20:

Heinzelman teaches a method for partitioning a video image between a foveated area (*Applicants specification at page 5 line 5 describes the foveation area as an area of motion. Since applicants specification defines foveation point and foveation area as an area having motion activity in the image, then applicants claims claim this. Applicant needs to amend the claims to exclude the means and method that Heinzelman uses to determine the area of motion in order to overcome the rejection. Applicant needs to amend the claims, rather than just presenting arguments directed to additional definitions given by applicant concerning foveation point and area, in order to overcome the rejection.*) and a background area (*The background area is the area of the video that is not a part of the foveation area, the texture includes at least the background.*) comprising the steps of:

defining a foveation point in the video image (*The point of the motion is the foveation point. Inherently the motion was determined and defined to form the motion data.*);

defining a foveated area in proximity to said foveation point (*The area surrounding the detected motion point is the area. Inherently the area surrounding a motion point was determined and defined to form the motion area.*);

extracting the first plurality of data signals from said video image representing said foveated area (*The encoder extracts the data signals corresponding to the motion data.*);

extracting a second plurality of data signals from said video image representing a background area (*The encoder extracts the data signals corresponding to the texture data.*);

encoding the extracted first plurality of data signals with a first error correction protocol to create a first encoded signal (*The encoder encodes the extracted data signals corresponding to the motion data with a first FEC coding.*); and

encoding the extracted second plurality of data signals with a second error correction protocol different from the first error correction protocol to create a second encoded signal (*The encoder encodes the extracted data signals corresponding to the texture data with a second FEC coding.*),

wherein the first error correction protocol comprises a first FEC algorithm (*See column 3 lines 1-5, 21-25, 38-40 and 57-62.*) and a second error correction protocol comprises a second FEC algorithm, the first FEC algorithm being more powerful than the second FEC algorithm (*See column 2 lines 46-50.*).

Claim 21:

Heinzelman teaches the method according to claim 20, wherein the step of defining said foveation point comprises the step of:

pointing a video device at a location of the image using a means for pointing (*To determine the areas of motion inherently a video device was pointed at all of the locations of the image to determine the locations having motion. Thus, this broad claim to pointing is met by determination of motion that was required to form the motion data in Heinzelman. Since applications specification discusses detecting motion then the claimed means for pointing is met by the means for detecting motion used to form the motion data in Heinzelman.*).

Claim 22:

Heinzelman teaches the method according to claim 21, wherein the pointing means comprises at least one of (*Heinzelman teaches at least one of the following because the system used to determine the motion inherently has one of the following computer components.*):

a computer keyboard (*Used by all computer equipment to allow the user to interface with the computer, the keyboard may be directly or indirectly connected to the computer. Inherently when determining the motion in the video a computer input device was used by the operator to direct the system to analyze the video with a video device that analyzes the video to determine portions of the video that have motion.*);

a computer mouse (*Used by many computer equipment to allow the user to interface with the computer, the mouse may be directly or indirectly connected to the computer. Inherently when determining the motion in the video a computer input device was used by the operator to direct the system to analyze the video with a video device that analyzes the video to determine portions of the video that have motion.*);

a joystick (*Used by many computer equipment to allow the user to interface with the computer, the joystick may be directly or indirectly connected to the computer. Inherently when*

determining the motion in the video a computer input device was used by the operator to direct the system to analyze the video with a video device that analyzes the video to determine portions of the video that have motion.), and

an eye tracking device (*Used by many computer equipment to allow the user to interface with the computer, the eye tracker may be directly or indirectly connected to the computer. Inherently when determining the motion in the video a computer input device was used by the operator to direct the system to analyze the video with a video device that analyzes the video to determine portions of the video that have motion.*).

Claim 23:

Heinzelman teaches the method according to claim 20 further comprising the step of:

calculating a local bandwidth threshold based on said foveation point (*This is a broad term and is met by the inherent motion analysis of the video where a point of motion is determined and a surrounding area is included with the point of motion.*); and

wherein the step of defining said foveation area comprises the steps of:

calculating a local bandwidth for each pixel group in said video image (*The local*

bandwidth is the pixels having motion corresponding the point of motion.); and

incorporating those pixel groups having a respective local bandwidth above said local bandwidth threshold into said foveation area (*The area of pixels in the video corresponding to the object having motion have a local bandwidth above a threshold bandwidth corresponding to the background having no motion.*).

Claim 24:

Heinzelman teaches the method according to claim 20 further comprising the steps of:

packetizing the first encoded signal with inserted synchronization markers occurring after a first predetermined number of bits (*See column 3 line 63 to column 4 line 65. 155 bits is used as the first number.*); and

packetizing the second encoded signal with the inserted synchronization markers occurring after a second predetermined number of bits wherein the first number is smaller than the second number (*500 bits is used as the second number. Clearly 155 bits is smaller than 500 bits.*).

Claim 25:

Lines 3-10 are identical to lines 3-12 of claim 20. The discussion of lines 3-12 of claim 20 are incorporated by reference. Lines 1-3 and 11-17 of claim 25 will be discussed.

Lines 1-3

Heinzelman teaches a method for the processing of video image data received from a first electronic device (*encoder*), the first electronic device having performed the steps of:

Lines 3-10:

see discussion of claim 20.

Lines 11-17:

the method comprising the steps of:

decoding the first transmitted encoded signal (*the decoder decodes the encoded signal, see column 5 lines 1-3.*);

correcting errors within the first transmitted encoded signal with the use of a high priority processing step to create a received foveated area (*The decoder uses a higher priority processing step to decode the motion data rather than the texture data, column 7 lines 13-16.*);

decoding the second transmitted encoded signal (*The decoder decodes the encoded texture data.*); and

correcting errors within the second transmitted encoded signal with use of a low priority processing step to create a received a background area (*The texture data is decoded with a lower priority step, column 7 lines 13-16.*).

Claim 31:

Heinzelman teaches the method according to claim 20 wherein the first plurality of data signals comprises all pixel signals included in a high-resolution area (*The term high resolution is a broad term and is met by the motion area of the video image.*) of said video image.

Claim 32:

Heinzelman teaches the method according to claim 20 wherein the first plurality of data signals comprises all pixel signals that are included in a high motion area of said video image (*The patent as a whole teaches the first plurality of data signals comprises all pixel signals that are in a high motion area even though a preferred implementation of the system limits the first plurality of data signals to 155 bits.*).

Claim 33:

Heinzelman teaches the method according to claim 20 wherein the first error correction protocol conforms to video communications industry standards H263++ and/or MPEG-4 (*The first FEC and the second FEC error correction*

protocols conform to H263++ and/or MPEG-4. See column 1 line 41, column 2 line 36.).

Claim 34:

Heinzelman teaches the method according to claim 20 wherein the second error correction protocol conforms to video communications industry standards H263++ and/or MPEG-4 (*The first FEC and the second FEC error correction protocols conform to H263++ and/or MPEG-4. See column 1 line 41, column 2 line 36.*).

Claim 36:

Heinzelman teaches the method according to claim 20 further comprising the steps of:

transmitting the first encoded signal (*The motion data is transmitted first.*); and

transmitting a second encoded signal at a predetermined time after the transmitting of said first encoded signal (*The texture data is transmitted after the motion data, thus, the texture data is transmitted after a predetermined time after the motion data is transmitted.*).

Claim 38:

Heinzelman teaches the method according to claim 25 further comprising the step of:

combining the received foveated area and the received background area to create the video image data (*See column 5 lines 1-4 which describes receiving the encoded motion and texture areas and reconstructing the video to display or store the video.*).

Claim 45:

Claim 45 is broader than claim 20 because it claims less limitations than claim 20 claims. Lines 1-12 of claim 20 corresponds to claim 45. The difference between claim 45 and claim 20 is claim 20 further claimed a specific type of error correction protocol, FEC. Thus, the discussion of lines 1-12 of claim 20 apply to this claim. Further discussion of this claim is not necessary.

Claim 46:

Lines 12-17 of claim 25 corresponds to this claim. The discussion of lines 12-17 of claim 25 as well as lines 1-12 apply to this claim. Further discussion of this claim is not necessary.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinzelman et al., U.S. Patent No. 6,754,277, in view of applicant's admission of the prior art at page 8 lines 5-13.

Claim 40 corresponds to claim 20. The discussion of claim 20 and Heinzelman applies here. The only difference is claim 20 claims FEC error correction protocol while claim 40 claims ARQ error correction protocol.

Heinzelman does not appear to discuss ARQ error correction protocol.

Heinzelman discusses using FEC at column 3 lines 21-24 as "one method of adding error protection". Thus, Heinzelman suggests that other well known error protection protocols may be used.

Applicant at page 8 lines 5-13 states:

Since all communication channels are lossy, that is, they introduce errors or packet losses and delays, conventional communications protocols rely on either forward error correction (FEC) or automatic repeat request (ARQ), or both, for data error correction. In FEC techniques, a damaged message is rebuilt by detective and corrective errors in the bitstream based on an additionally transmitted code word, while in ARQ, damaged message packets are retransmitted based on a Acknowledge/NotAcknowledge (ACK/NAK) feedback signal from the receiving station. Both protocols consume additional delay and overhead in order to be robust to poor channel conditions.

It would have been obvious to one of ordinary skill in the art to use ARQ in Heinzelman because in Heinzelman FEC is one example given by Heinzelman as one method of adding error protection, column 3 lines 21-22, other methods are suggested by this statement and since applicant admits that ARQ or FEC or both are commonly used for error protection and since Heinzelman and Applicant are concerned with having the highest error protection that a wireless system will allow.

Claims 41-44:

These dependent claims correspond directly to dependent claims 21-24 and the discussion of claims 21-24 apply to these claims. Further discussion of these claims are not necessary.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is 703-305-4723 until the move and after the move the telephone number will be 571-272-7656. The examiner can normally be reached on M-F from 6:30 to 3:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffery A Brier
Primary Examiner
Art Unit 2672